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ABSTRACT

An assessment of the status of environmental education and perspectives on its future direction are presented in this report of the Netherlands' Commission on Environmental Education (CEE). Viewpoints and analyses are offered for the purpose of stimulating discussions and providing recommendations for the development of environmental education. Major sections include: (1) reasons for a new assessment (reviewing previous ideas and points of view on environmental education); (2) consideration of the developing field of environmental education (examining external influences and internal developments which have affected environmental education and offering the primary objective as formulated by CEE for environmental education for the present); (3) starting-points for an educational method (addressing the methods, goals, and processes of environmental education); and (4) starting-points for further recommendations (identifying target groups and suggesting priorities for future examination). Appendices include a bibliography of ten references and an explanation of terms used in the report. (ML)

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COUNCIL FOR NATURE CONSERVATION

COMMISSION ON ENVIRONMENTAL EDUCATION

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A BASIC ASSESSMENT OF ENVIRONMENTAL EDUCATION

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COUNCIL FOR NATURE CONSERVATION

COMMISSION ON ENVIRONMENTAL EDUCATION

A BASIC ASSESSMENT OF ENVIRONMENTAL EDUCATION

October 1985

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FOREWORD

This basic assessment should be regarded as an updated version of the so-called 'yellow paper' which the Commission on Environmental Education (CEE) submitted in 1975 to the then State Secretary for Cultural Affairs, Recreation and Social Work. That paper, whose official English title was 'Recommendations with regard to an environmental education policy plan' (available from the Secretariat), found its way into the offices of many official and political authorities and private organisations in the Netherlands. At a time when very little was being written about how the content, methods and organisation of environmental education should be developed, these recommendations made a significant contribution to the formation of opinion in this field.
In ten years much has changed, both within the discipline itself and outside it. An updating is therefore necessary. The view expressed in this paper is not the only view which it is possible to hold. The CEE considers that its assessment constitutes a relevant contemporary contribution to the development of environmental education.
This basic assessment has a threefold purpose:

- to explain the present thinking of the CEE,
- to make outline recommendations to the Minister of Agriculture and Fisheries on the subject of environmental education,
- to stimulate discussion by people working in and for environmental education.

The CEE was originally set up to make recommendations concerning environmental education to the Minister of Education, Arts and Sciences (1951-65) and the Minister of Cultural Affairs, Recreation and Social Work (1965-82). It now functions under the Nature Conservation Council and makes recommendations in that connection to the Minister of Agriculture and Fisheries.
The CEE's history and its position within the machinery of government mean that this basic assessment - which has been formulated in the broadest possible terms - should be viewed against that background. It is desirable that other people, from other backgrounds, should make similar attempts to produce an assessment of this kind.

CHAPTER 1. REASONS FOR A NEW ASSESSMENT

1.1. Introduction

A great many developments have already been apparent in the field of environmental education* for quite some time. Besides the school of thought which advocated "education for nature-conservation-mindedness", there had always been a small group which stressed the societal background of environmental problems as a starting-point for educational work. The latter group has considerably extended its influence, as can be seen from the subjects which are currently on the public agenda, such as waste disposal and energy problems, industrial effluents and environmental problems in the Third World. People have become aware that the processes which we are up against are worldwide processes, requiring more than just action by individual countries. It has been generally realised that there are international responsibilities in this connection. This has had its repercussions on environmental education.

The change in environmental education is reflected above all in a change in its content. It is now recognised, much more than before, that man's actions and hence the quality of the natural environment are governed by a combination of social and economic factors. Gaining an insight into the interaction and connection between these factors is a lengthy process requiring new knowledge and skills on the part of the educator*. Formerly people often worked on the assumption that merely to communicate a message could directly bring about changes in patterns of action. But experience has shown that such changes cannot be taken for granted. It is increasingly becoming apparent that people are exposed to conflicting flows of information. Consequently the approach of environmental education has gradually become oriented more to an analysis of problems and less to a description of situations. And lastly, the political context in which environmental education takes place has also changed. Interest in the subject has increased at all political levels,

* for items marked with asterisks, please see the explanation of the terms used at the end of this basic assessment (Annex 2).

as witness views expressed by politicians, policy statements, questions in Parliament and so on. This is logical because the number of problems has increased and at the same time there is greater awareness that technical means alone will not provide the solution to those problems.
Thus as society proceeds on its dynamic course, it continually poses new questions for environmental education which cannot always be answered with the aid of established educational knowledge, resources and methods. A new look at man, nature and society may show the way to those answers. This basic assessment is an attempt in that direction.

1.2. The "yellow paper"

The thinking of the CEE about environmental education has also evolved. The "yellow paper", conceived as an assessment of nature conservation education*, was based on the assumption that the lack of harmony between man and nature which is observable in our time has its roots in the fact that man has grown away from his direct link with the natural world. The paper therefore advocated encouraging the experience and knowledge of nature. The intention was that that should lead to a sense of involvement and hence to a real contribution towards the conservation of nature. And that was to have been the solution to the problems affecting the environment.
The "yellow paper" was ambitious in its aims, and the means and methods proposed for achieving those aims were still too much under the influence of these old ideas. In its paper on the World Conservation Strategy (1981), available in English from the Secretariat, the CEE went a step further when it stated that "the goal is to bring about a change in attitudes which will make it possible to effect changes in society in the future". By this the CEE meant that in its opinion political decision-making must be the basis for the long-term conservation of nature. The CEE's present assessment of environmental education, as described in Chapter 2, is based on this view.

1.3. A field full of tension

The developments and changes already mentioned are far-reaching. Recent past experience shows that this produces tensions and controversies. This is why it is still certainly impossible to speak of a fully developed discipline which has clearly and unequivocally formulated its objectives, methods and resources.

The co-existence of different views of man, nature and society may be a hindrance to the development of environmental education. But if people are prepared to listen to one another, such a situation can also have a stimulating effect. When there is insufficient or no willingness to exchange views on the subject, the clash of opinions has a negative effect on opportunities for deeper knowledge and for cooperation. To a certain extent something of the kind has happened in the field of environmental education. This had something to do with differences of views between the ministries responsible for policies in this field, differences between the "anti-pollution" approach and the "nature and landscape" approach. These differences are now increasingly being found to be stimulating and it seems that the supposed distinctions, at least, are going to gradually disappear, although differences in world-view, methodology, choice of subjects, scope, etc. will obviously remain.
There is also a tension between people's ideals and the extent to which such ideals are realisable. This also applies to the ideals (objectives) of specific schools of thought, for example the conservation/environmental movement. This movement underwent substantial development during the 1970s, yet has always had relatively little influence on power relationships within society, although it did attempt to exert such influence. That situation is also reflected in the position of environmental education.

Environmental education must try to clarify differences of views and must show how all kinds of problem areas are mutually connected.

1.4. Developments in society

Society, and with it the way in which decisions are arrived at, is continually changing. People have become more aware of the complexity of our society, of their dependence on world-scale processes - processes which are thus often difficult to comprehend - of great social problems, of highly threatening phenomena in the environmental field (acid rain, nuclear power), of wide differences between the rich and the poor in the world and of the threat to world peace.
They have also become more aware of the differences in the influence which different individuals can exert on such situations and occurrences. This hardly encourages the majority of people to participate in the political process. Much more common than political involvement are reactions such as escapism, apathy, aggression, etc.
At the same time we can see how all kinds of developments can spur people into taking action. We would refer in particular in this connection to the relatively great openness and relative ease of accessibility of information which characterise Dutch society. People increasingly have access to all kinds of information about matters which affect them. Furthermore, the volume of training and courses available to meet their learning requirements is very large - adult education, evening classes, Open School and Open University, to give a few examples.

Environmental education can, in view of the subjects with which it deals and making use of this developing "infrastructure", show that it is indeed possible for individual and collective influence to be brought to bear on the functioning of our society.

1.5. A new assessment

In this assessment, and in particular in Chapters 2 and 3, the CEE attempts to set out its present thinking about the contribution to be made by environmental education to the creation of awareness about:

- man's place in nature,
- the way in which human action is intermeshed with economic processes,
- the options available in the combating and prevention of environmental problems.

CHAPTER 2. CONSIDERATION OF THE DEVELOPING FIELD OF ENVIRONMENTAL EDUCATION

2.1. Introduction

In this chapter, we look at the external influences and the internal developments which have changed environmental education into what it is today, with all its diversity. Based on this examination, we formulate a new goal for environmental education.

2.2. Environmental education in a social context

A realisation of the value of nature, aside from all its useful functions, has gradually developed over the years as an artistic theme and as a source of inspiration for philosophy. The conservation of this value is now even embodied in the law. It can be said that there has never before been such a consciousness of nature. This intrinsic value justifies a form of nature education* which attempts to develop and stimulate an interest in nature, without going into the underlying social problems. But this is not all. Parallel to this development of nature-consciousness, and probably linked to it, the encroachment upon nature is gradually assuming greater proportions. This means that nature education which does not deal with environmental problems is effectively impossible; people are gradually and ever more intensively experiencing these problems themselves, and they want a solution. While not denying in any way the validity of an interest in nature as a goal in itself, and recognising the educational value of pure nature education, the CEE regards the total or partial failure to observe natural ecological laws as the most fundamental motivation for environmental education. All is not well with nature, and the cause lies in man's misuse of his power to influence nature; the seeds of this problem were sown centuries ago. In searching for a way out of the problems which have been created, we are not looking for a way "back to nature", but for something completely new, and the way has still to be found. A general realisation of man's place in nature is essential. Environmental education has a specific duty to contribute to this perception. In consequence, environmental education cannot be divorced from its social context.

2.3. From partial solutions to an integrated strategy

Man's activities, aimed at the individual and collective satisfaction of material and non-material needs, take place within the economic and social structures in which he lives. The discrepancy between what is seen as essential from an economic standpoint and what is regarded as desirable by the individual has led to an almost inextricable tangle of environmental problems in the industrialised world. People there have become part of what is sometimes described as a "predatory economy". Such an economy does not respect the long-term conditions which nature imposes. As a result, the limits of nature's capacity to adjust are within sight. The recognition of the existence of a number of negative side-effects inherent in our economic system (including environmental problems) has led to a search for ways to reverse this. How does this relate to the great problem of the imbalance of man's position in nature?

Generally speaking, people reach for technical aids to solve the various environmental problems individually. In itself, there is nothing wrong with this, but it must be realised that this approach usually only tackles the consequences of man's activities and not the causes. Dealing with the consequences without fully comprehending the causes can itself lead to new problems. Such unintended side-effects often only become visible in the longer term. Measures which are in themselves logical then become part of a chain which, viewed overall, is illogical. For these reasons, technical, often short-term solutions for problems perceived as intolerable must be viewed in the context of the longer term.

The spatial aspect of the problems of nature and of man's environment reaches far beyond our - materially speaking - overdeveloped part of the world. Since colonial times our actions have had major - usually negative - effects on the opportunities we have left open to other parts of the world to develop according to their own culture patterns. Our actions must must be seen in a world context, if we are to obtain a clear picture of our contribution to environmental problems elsewhere in the world and the economic and social problems which are directly related to them. This gives us a heavy responsibility.

People have a tendency to formulate problems in the most concrete possible terms, because this makes the way to a solution clearer. Since many concrete problems and their solutions relate to aspects which are no more

than part of more distant problems, a predetermined long-term strategy is essential for a solution. In the Netherlands, various scenarios have been developed. The so-called CE scenario put forward by the Centre for Energy Conservation (1983, also available in English) comes closest to the views of the CEE.

This paper describes the way in which part-problems are linked to underlying factors, and the direction in which solutions are sought is geared to this. The search for a solution begins with the fundamentals and can thus lead to better results. In the CEE's view, technical means should support policy and not direct it, as is all too often the case.

Responsibility for nature is not just a matter for the individual. Almost every sector of society is involved, in a relationship of mutual dependence. What happens within one sector affects the other. The sum of the measures taken within the various sectors gives rise to still more new problems. Individual responsibility towards nature is good and essential, but it is no longer anything like enough. People's responsibility is now first and foremost a collective responsibility, a result of our culture and lifestyle. On a foundation of democratically functioning consultative structures, this responsibility can really show to full advantage. This obviously has important consequences for the ways in which environmental education must be developed: strategies, target groups and choice of themes.

2.4. The use of the "reductive" method in environmental education

The nature of the effect on, and hence the appearance and quality of nature are socially determined. Everyone has an effect on nature, however divergent people's ideas about man's place in nature may be.

Environmental education must make it clear that human actions, in terms of both causing and solving problems, can be looked at from different viewpoints:

- from the need to see partial solutions in the context of a broad strategy (the aspect of function),
- from the need to relate human actions to the effects they have elsewhere in the world (the aspect of place),
- from the need to view short-term solutions in the context of long-term solutions (the aspect of time).

In order to prevent misunderstandings, it must be said that environmental education is not intended to impose certain norms and value patterns on people who have not asked for them. After all, there is little difference of opinion about the necessity for the continued exploitation of nature; there is, however, a conflict about the means to be used and the intensity with which it should be done. Nor should environmental education attempt to paint a picture of an "ideal" society, with the inherent suggestion that this entails one particular type of state. A lasting society is determined by all kinds of social, economic, cultural and political factors, which can operate to full advantage in a democratic state. It may also be said that the decision-making processes, to which the weighing up of these factors must lead, are far from ideal. And finally, it is not the purpose of environmental education to point the finger at particular "guilty parties" who have caused the crisis in nature and the environment. There is, of course, guilt involved, but all social groups share in it, albeit to widely differing degrees. What is more important, however, is that different groups have different responsibilities. For example, in so far as the environmental crisis is of a structural nature, groups with a strong economic or political power base have a greater responsibility than (groups of) individual consumers. The former can, after all, bring about more effective changes in, slow down or even block ecologically harmful production structures. The ideas relating to target groups (sections 4.2 and 4.3) arise in part out of this.

The educator must have his ultimate goal - greater awareness and more knowledge of the social character of environmental problems - clearly in view. He will try to achieve this goal in different learning situations, by formulating sub-goals. To this end, the picture of worldwide environmental problems is reduced to part-problems of function, place and time, which can be handled by the target group.

- Reduction according to function

  Different functional groups have different relationships with the environment. Environmental education tries to show that the interests of a particular sector are related to the ecological interests of the whole community. For example: when talking to farmers, one must try to explain how their farming activities are part of an economic system which, in ecological terms, does not function satisfactorily.

- Reduction according to place

  The surpluses with which the industrialised countries are confronted go hand in hand with shortages elsewhere. The nuisance caused by these excesses is combated with measures which leave untouched the existence of this antithesis (for example, setting up nature reserves without doing anything about water pollution, purification plants without reducing the import of cattle feed, air filters without reducing energy consumption, and so on). We must think positively about small "solutions", but in one way or another the worldwide problem must be brought into it - apparently as a secondary aspect, but of vital importance to the educational process.

- Reduction according to time

  In the short term nature reserves, purification plants and air filters can bring about noticeable improvements. Environmental education must show that, if the social processes which underlie the problems continue, the improvements will often be no more than temporary. After a while, the problems will simply recur. It must moreover be realised that treating the symptoms ("solving" the problem by creating a new one) brings spiralling costs in its wake, and in the long term this can lead to unacceptably high levels of expenditure for both the industrial sector and the government.

Working on the basis of these reductions, the educator will realise that they are only the first step on the road to greater insight. Chapter 3 deals with this in more detail.

2.5. From nature conservation education to environmental education

The description of the field contained in the "yellow paper" is adequately covered by the term "nature conservation education". While the paper does refer to a societal background, it does not link this to any consequences for environmental education. There is, of course, everything to be said for bringing children (and older people) into contact with nature, stimulating their knowledge and hence developing their involvement. But the analysis in the "yellow paper" does not go far enough. Our forefathers' awareness of nature - such as it was - arose not out of a sort of friendship with nature, but rather out of man's inability to pit himself against nature and hence to exert a strong influence over it. People had to respect nature, on pain of disease or death.

It goes without saying that, among other things, the development of technology sprang from this inability: people simply wanted a better life. This emphasis on technology, so characteristic of the development of western culture, was given a powerful stimulus by the Renaissance and led to a self-reinforcing process which has continued up to the present day. We now want to give substance to this societal background, and for this reason we refer to "environmental education".

Nature conservation education is characterised by its separation from nature conservation as a sectoral societal interest. It is now concerned more with fostering responsible citizenship and rational thinking, encouraging the use of common sense, eliciting value judgements and equipping people so that they are able to make independent choices. This does not mean to say that environmental education is value-free. The fact that society must base its actions on compelling ecological conditions - we shall return to this later - can in itself be regarded as an interest, a value for everyone, and we must work for its recognition.

Complete understanding of complex relationships is a far-off ideal, which no single individual can achieve. This becomes even more of a problem when one also wants to derive strategies for action from insights which have been acquired. The scenarios already mentioned are the first attempts to develop such strategies. They act as a stimulus for consultation and cooperation, with which people can meet the demands placed upon them by the increasing complexity of society. Scenarios also help to create familiarity with another way of thinking and living, which takes more account of the possibilities and limitations of nature in relation to the satisfaction of human needs. The characteristics which this way of thinking and living will have to embody have been discussed elsewhere (Hetzel, undated and 1981). These characteristics include:

- recognition of the existence of and man's subjection to ecological laws;
- cohesion in disciplines; the formation of a cohesive view of the world;
- willingness to analyse and relativise one's own capacities;
- perception of personal actions in a worldwide context;
- allowing moral, ethical and also aesthetic criteria to play a role alongside considerations of utility;

- linked to this: consideration of qualitative approaches, insight into the limitations of causal-quantitative, legal and technical approaches to problems.

These characteristics are far-reaching. They could lead to a new "style of being" for people, which sees the individual and collective responsibility for everything around us in broader terms and brings it into closer harmony than the current legally or technically feasible partial solutions. Environmental education intended to serve this end must therefore occupy itself with the whole of man's being.

The times we live in mean inevitably that people's perception of themselves is changing. Environmental education should therefore look at the ways in which people satisfy their needs and at the way in which changes occur in this pattern.
The direction which today's environmental education must take follows naturally from the foregoing. It must lead to the realisation of the way in which general, to most people fairly abstract, principles can take concrete shape in everyday life. And, conversely, people must learn to see how everyday things are in all sorts of ways symptoms of processes which extend worldwide, over the long term and over a wide area. People are subordinate to these processes. Finally, the connection between these two fields must be linked by asking what effects our own activities have on what happens in the world, for both good and ill.

2.6. Developments in the field of education

Education is a profession which demands specific expertise. It is not difficult to talk to kindred spirits on the themes of nature conservation and the preservation of the environment, but it is quite an art to reach people who have never been given an opportunity to become acquainted with them. Education in general is occupied with the problem area; specifically, child education and adult education are trying to understand people's attitudes and derive from them guidelines for education. These fields are going through a process of rapid development. In educational circles, better use is now being made of

knowledge about the learning needs and the learning desires of children and adults at various stages in their lives than was the case a few years ago. But child education and adult education have broader goals. They cover a much wider field than that of nature and the environment alone; they look at the whole area of social and individual emancipation and aim at enabling people in general to function as well as possible. It is precisely from this viewpoint that interest in and learning about nature in itself has a function of its own: looking at what happens in nature can also have personal development as its goal. In this sense, environmental education is obviously a part of the general education process.

As we have already said, attention must also be given to more problem-oriented teaching methods. This does not, of course, mean that children (or adults, for that matter) can be bombarded with the full weight of undirected problems. Depending on a number of factors, such as age and stage of development, there must be a phasing from the limited, the concrete, the close-at-hand, the process of discovery to the broad, the distant, the abstract, the process of problem-analysis.

The two conceptions (problem-oriented or otherwise) have different "traditions" and their basic assumptions have different roots. They are not, however, opposed to each other, but can in fact be complementary in the most diverse educational situations. Awareness of social problems does not have to stand in the way of personal experience.

Thinking about "solutions" to problems is not quite the same in children as it is in older people, whose analytical skills are usually more developed. The integration of the two approaches presents an important challenge to environmental education. Arousing a sense of wonder about and an admiration for nature, such as that usually created by nature conservation education in the past, can be one means of access, in addition, for example, to responding to individual experiences with environmental problems, critical situations (environmental disasters) or the need for knowledge about nature.

Similar questions are equally important in the case of adults. Here too a balance has to be struck between what the educator wants to put across in terms of subject matter, and what the target group itself thinks is

important. People who know nothing about what is going on in the environment cannot be approached through problems which they cannot solve. In adult education, this has led to a course plan in which the students themselves largely determine the content and composition of the course. The "experiential learning" developed in adult education is one facet of a methodical approach to environmental education. The general characteristics of these experience-oriented methods of arousing consciousness include the following factors:

- the subject matter is determined by the needs of the student,
- the way in which the lesson material is dealt with is determined by the group of students,
- the lesson material arises out of or is related to the students' experiences,
- its broad aims are directed towards more participatory behaviour, outside as well as in the learning situation.

Other authorities place greater emphasis on the problem-oriented approach. This can lead to the following steps:

1. analysing the actual situation, on the basis of specific experiences, and relating it to the living situation, the social context, the ideological base,
2. generalising subjective experiences by obtaining relevant supplementary information, by comparison and assimilation,
3. operationalising: getting down to work on the basis of the new insights, working towards a different society.

The two approaches are discussed in greater detail in the following chapter. While the foregoing certainly does not relate solely to situations outside schools and colleges, the developments within the formal education system justify an additional observation. For example, the recent realisation that the present subject-oriented approach no longer meets the current demands of society is extremely important. In particular, we are now seeing more interrelation between biology, geography, physics and chemistry. As a result, areas of learning which are more broadly oriented than the traditional subjects are being created. Environmental education is currently responding well to this development, often in the form of project work.

2.7. A primary objective for environmental education

The CEE formulates the primary objective of environmental education as follows:

To enable people to acquire knowledge of and insight into:

- nature, as the origin of life and condition for living,
- the way in which, conversely, human actions affect the quality of nature and the landscape,

so that they can, with a sense of responsibility, make well-considered personal and social choices which do justice to this mutual relationship;

and enable them to develop the attitudes and skills which can help them to implement these choices as effectively as possible in shaping society.

The CEE has thus opted for an objective which is not only involved on the personal plane (microlevel), but also explicitly on the level of society (macrolevel). In view of its attitude that the quality of nature and the landscape is the result of political decision-making in respect of (primarily) production and consumption processes, such an objective is self-evident.
In order to achieve a long-term objective of this kind, with different target groups, a number of intermediate steps with specific objectives (teaching goals*) are necessary. Section 3.3 looks at this in more detail.
We can further amplify this objective as follows. Its formulation accords with the ideas on the concept of "education" contained in Chapter 3.
This appears to be less true in relation to the social concern about environmental problems which perhaps emerges from other sections of this basic assessment. After all, workers in the field of environmental education hope that their work will make a clear contribution to solving these problems.
This creates a certain directedness in the educational work: the process of environmental education is, indeed, not value-free. The CEE is well aware that the practice of environmental education creates an area of tension, with on the one hand the need for objectivity (no imposing of opinions, the making of free choices). On the other hand, there exists a need for attitudes and behaviour which will lead to rapid solutions to environmental problems. Despite this, the CEE believes that, in view of the long-term aspects of environmental education, it is right to choose this formulation, since it reflects an ideal.

In the following paragraphs and in the next chapter, this goal will be discussed in more detail and will be related to the conditions for educational work.

2.8. Relationships

In the previous paragraph we formulated a goal for environmental education which concentrates on arousing an awareness of certain relationships. Theoretically, education is involved solely with equipping people to make conscious choices: nobody has the right to tell someone else how to organise his life. But acquired experiences, knowledge, insight, skills and attitudes contribute to a lifestyle which respects ecological laws. This statement gives content to the argument in favour of the attempt to awaken or expand the awareness of these relationships. The elements of "relationship" and "lifestyle" will be further explored in this and the following section.

In the CEE's view, man - like all living organisms - is subject to the laws of the self-ordering elements of nature, as we have already said. Despite this, man strives to create his own, conscious order (culture) and to satisfy needs which he derives solely from his own insight and not from the existence of natural laws. Herein lies the potential conflict between man and nature. In former times - until as recently as the last century - the individual had a clear influence on nature (in his environment): production methods and transport were relatively simple, while government, economic and social systems had little influence in this respect. There has been a major change: now it is society as a whole which exercises the greatest influence over nature. We are now no longer dealing with an individual influence, but with a collective one.

In fact, society increasingly determines man's place in nature. As a result, the nature of the relationships has changed. The influence of individuals on nature usually had to do with fairly tangible matters such as land use, the use of natural resources, transport, etc. Obviously, these relationships still exist, but they are harder to reduce to the activities of individuals because of their large scale, complexity and indirect character. They are primarily economic, social, cultural and political. In consequence, the nature of the environmental problems with which we are now confronted has also changed.

Environmental problems are often classified according to the type of intervention which causes the problem, or according to the significance ("value") which is affected. The "type of intervention" thus refers to such problems as pollution, exhaustion of resources and encroachment; the "affected value" to such things as people's health and safety, function losses and the environment's loss of intrinsic significance.
These classifications do have a certain relevance for environmental education, but they do not say enough about the nature, scale and duration of the underlying human actions. And these reductions were - as we saw in section 2.4 - of such prime importance as the basis for an educational strategy. It is therefore evident that the current classification (at least for the purposes of environmental education) must be related to the classification according to nature (function), scale (space) and duration (time). This is, above all, a job for science.
In this way a clearer insight may be obtained into the various aspects of the problem (area), thus making points of reference for educational work clear. It will then be possible to achieve better coordination with the capabilities of given target groups.

2.9. Lifestyle

In a country such as the Netherlands there is a general realisation that people themselves are responsible for their actions. By means of legislation and regulation, the government does place limits and conditions on human actions, and society as a whole does the same. The need for this is dictated by the general desire to achieve optimum conditions for the self-development of the individual. This is certainly also true of ecological conditions which cannot be achieved without government intervention. It might be asked whether excessive intervention is not an encroachment on personal standards and values. The CEE considers it important that individuals should have ample opportunity to determine their own lifestyles, although this can of course have an adverse effect on nature.
Another major problem arises out of the material and spatial circumstances which - in environmental terms - quite simply make it impossible "to respect ecological laws". Merely organising the space for our housing, work and recreation can stand in the way of this attitude to life. The numerous examples of this do not have to be listed here; they are familiar

enough. Finally, the development of an individual lifestyle can also be hampered by such factors as deception, indoctrination, advertising and the withholding of information.

From this we can see that, in their individual actions and even more in their collective ones, people must respect a number of broad ecological objectives, if the quality of nature and of human existence are to be safeguarded in the long term. These objectives are stated - in general terms - in the World Conservation Strategy:

- to maintain essential ecological processes and life-support systems,
- to preserve genetic diversity,
- to ensure the sustainable utilisation of species and eco-systems.

Such general objectives cannot, of course, be used without further elaboration. They must be geared to the various sectors of society and translated into political, economic, social and cultural terms. In this respect, a National Conservation Strategy - advocated by the IUCN and also being developed in the Netherlands - will provide greater clarity about the nature of the social changes which will have to take place.

CHAPTER 3. STARTING-POINTS FOR AN EDUCATIONAL METHOD

3.1. Introduction

At the end of the previous chapter we looked at the connections between mankind's efforts to satisfy its needs and nature's capabilities and limitations in that respect and also at the necessity for an awareness of such problems. We have not yet discussed the means whereby that awareness can be created. In this chapter we shall deal with the methods to be used in environmental education, methods described in the objectives section of the "yellow paper" as "the furthering of a process".

3.2. The term "education"

In the previous chapter we gave a theoretical framework for the place of environmental education in the developments which have taken place in society as a whole and in the field of educational theory. On this basis an objective was formulated which, the CEE hopes, clearly sets out what the CEE has in mind, although that objective is, admittedly, still too far removed from the practical world to be applicable directly as a set of methods.
Education* can be described as the deliberate organisation of learning situations. In environmental education this takes place with regard to everything which is considered to be an environmental problem. The CEE wishes to formulate the following criteria for education:

- the situation must be deliberately oriented towards teaching goals which must be attained; these goals must be described in concrete terms,
- the activities must be built up logically and in a structured manner within a predetermined period of time,
- the activities must involve a clearly described group of participants.

In the CEE's view this description is readily applicable in concrete situations, including those occurring in environmental education.

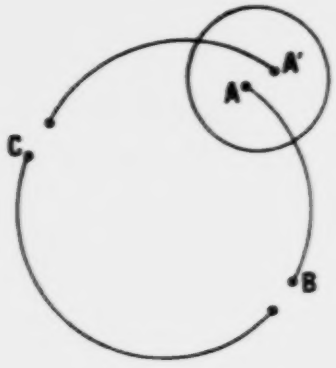
3.3. Teaching goals and the process of education

The term "teaching goals" can give rise to a great deal of misunderstanding, particularly in view of the fact that the educator, as initiative-taker, may at the outset have very different intentions with regard to an educational programme from those held by the student. When people wish to take an active interest in their environment, they require from the educator the means which are necessary for doing so. If, in this connection, they ask for solutions to a problem, the educator can help them. But the educator, for his part, will wish to bring the group a step further and to make it clear that behind every solution there lurks a new problem.
How can these differing intentions be reconciled?
In section 2.2 it was stated that the continual search for solutions to part-problems had been, in the final analysis, jointly responsible for the occurrence of environmental problems and for our alienated attitude towards nature. It follows that concrete goals, specified not only by function, place and time but also by target group, cannot in themselves be the final goal of educational activities. This is certainly true if the target group cannot directly make a clear contribution to the solution of problems. Far more than this, it is the educator's task to enable his target groups to gain insight into problems in their important aspects. If his target groups demand a solution to a problem which they have experienced, the educator should try to make them aware of the (consequences of) different options available. In both cases he should make it clear, in order to exclude the possibility of manipulation, that his prime concern is to bring his students up to a "higher level of insight" with regard to the environmental problems. Paradoxically enough, an important didactic role is thus created for "problem-solving", but as a means of

attaining the general (teaching) goal which has already been formulated and which has not been described in such detail with regard to specific function, place, time and target groups. In this way environmental education tries to create an awareness which transcends the limitation of concrete part-problems.

In schematic terms the train of events can be seen as follows. For the sake of an educational process the educator creates a learning situation in which he proposes a solution A' to the participants in connection with a problem they have experienced. The course of the solution will then run through steps defined in time and represented as B and C (see Figure 1):

Figure 1



In nature conservation education, as described in the "yellow paper", the circle is thereby closed. Perception of problem A has led, by way of experience and knowledge (B, C) to action A', which is an appropriate solution to the problem. The target group obtains an indication of appropriate future action. In that view, A' is regarded as a solution to, for example, a problem which has been raised, but which is connected with all sorts of underlying problems and factors. Insight into this problem can lead to a renewed analysis, by way of problems A', A'', A''' to A^n (see Figure 2).

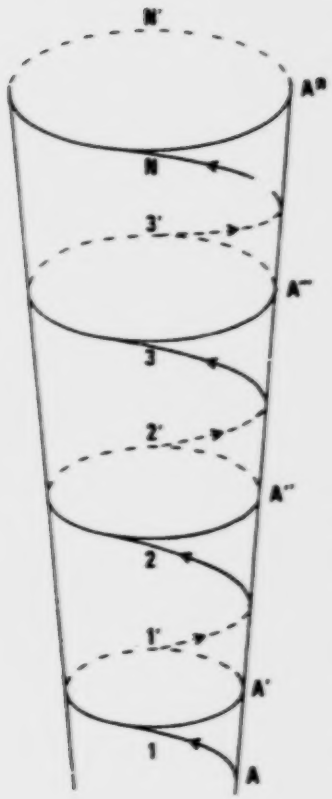


Figure 2

The gaining of understanding into a problem and the factors behind it (solving it is not always necessary) leads, via a rising spiral, to the attaining of insight levels 1', 2', 3', to n'. In other words: part of the task of education is to see the part-problem in the context of the whole.
The route which the educator is concerned with is therefore the one from 1' to 2' to n' in a spiral ascent. By this means the required insights, skills and attitudes are acquired, which can eventually solve a fundamental problem A^n. In this way a process is set in motion which never stops and which, with every result achieved, raises new questions. Thus the road to insight into the causes of our conflict with nature is made visible. Education which does not attempt this will never lead to the insight which is necessary for the way of dealing with nature referred to here. The character of the problem raised, of the questions lying behind it and the possible solutions to it - which we will have to examine at a later stage - can be treated

by the educator in relation to the situations or opportunities which present themselves and in the light of the wishes expressed by the target group in question.

Where should the objective of environmental education lead to? And why does the educator do all this work, knowing that the final point will never be reached? These questions bring us to the problem of the description of teaching goals from the educator's point of view.
Education and training require a certain attitude: an openness to outside influences. In addition there must be a possibility of obtaining information about all possible matters. These two conditions must be satisfied if we are to be able to act responsibly.
The "yellow paper" is also to a certain extent based on this view. The paper contains an interpretation of Bloom's ideas (1973 and 1979) in terms of experiencing, knowing and acting. Experience and knowledge are seen as preconditions for the coming into being of an environmental ethic (sense of responsibility). The quality of being open to outside influences can be based, among other things, on the experience of nature, the need for knowledge or the desire for survival. The possibility of obtaining information means on the one hand that there must be a supply of knowledge and on the other hand that the skill of acquiring and processing this knowledge must be learnt. The knowledge and skill must make it possible to gain insight into the relationships which exist within our environment. On the basis of this insight:

- analyses of society or of subsidiary aspects of society can be made, depending on the standard attained.
- values can be defined: what attitude, what action, what sort of society, what ideology is regarded as good?

The educator must now make a choice from one or more "part-strategies" which are directed at various groups. The following elements are central to such part-strategies, though not necessarily in the order stated:

1. Interest

   Unless an interest in environmental problems is present, no educational process can be built up. This interest may be based on a desire for survival, on an experience of nature, on the need for knowledge or on the desire for better insight.

   The stimulating of interest is normally a precondition for the taking of the next steps. Those steps are briefly described below.

2. Way of thinking

   What is meant here is the formation of a cohesive world-view, the ability to see through ideologies and received ideas.

3. Analysis of society

   This is an attempt to stand at a distance from the conventional wisdom prevailing in the society; in this way the target group is enabled to form its own picture of the forms of existence which in its view are desirable.

4. Strategies for action

   This is what it comes down to in the final analysis: that responsible citizens should shape their own existence on the basis of their involvement and a positive view of the future, with due regard to the limits which the community sets and on the basis of the realisation that every community is a component of worldwide ecological processes.

These part-strategies - the development of interest, the way of thinking, the analysis of society and the strategies for action - form the connection between the succeeding problems and solutions. They constitute the rising spiral described above (Figure 2), the learning route for the pupil and thus the ingredients of a methodical approach to environmental education. A learning route of this kind cannot be travelled without a knowledge of the facts. That applies with regard to both ecological and social processes and to all four of the part-strategies mentioned.

The teaching of these facts, so far as they are not taught in the parental home, is principally the task of primary and secondary education.
Depending on, for example, the standard attained, the degree of interest and the social background, this series of part-processes determines where the emphasis can be placed in educational situations and at what level of knowledge work can commence. That, incidentally, is not as easy as it might seem: the activities geared to one of these phases are also important in the other phases but in a different context.
There is no reason for assuming that a framework of this kind is only suitable for use with adults and not with children. Obviously, only a limited number of phases can be passed through with children, depending - for example - on the standard reached. The approach is, however, basically the same.
The foregoing can, as already said, provide the basis for a methodical approach to environmental education, but it cannot do more than that. A study of teaching theories and special subjects related to environmental education should make it possible to build on this basis in greater detail.
In this way environmental education endeavours to contribute to the emancipation of mankind, in other words, to contribute to the confidence and courage with which people view their world; a world full of problems which cannot be solved by individuals alone.

CHAPTER 4. STARTING-POINTS FOR FURTHER RECOMMENDATIONS

4.1. Introduction

Chapters 2 and 3 described how the objective of environmental education can be divided up into a number of elements. It was also pointed out that it is only possible to work properly with those elements if goals are differentiated according to different sectors of society. Such goals must fulfil certain ecological requirements.
Something was also said about the relation of problem areas to target groups; nobody can deal with the entire field. The options open are determined, among other things, by a person's position in the society. This chapter investigates the choice of target group in rather more depth and closes with an indication of the themes which the CEE wishes to elaborate in greater detail in the coming years in the form of a number of subsidiary recommendations.

4.2. Categorising the target groups

For environmental education to achieve the (teaching) goals that have been set, it is important to distinguish between different target groups. There is nothing new about this: it has been done to a greater or lesser extent for many years now. The selection criteria applied do, however, differ widely and lead to a great variety in the final choices of target groups made by the organisations in question. Although this variety may be useful, there is a real chance that there may be gaps in the spectrum.
The CEE would describe the possibilities of arriving at a soundly based choice of target groups in the following way. Both individually and collectively people effect changes in their environment, whether deliberately or not. Such changes differ in nature, intensity and range (according to the place and the time) from person to person. The educator must be aware of these variables if

he wishes his work to be relevant to the target group. Section 2.8 gave a global indication of this when it spoke of the setting up of a kind of matrix. This can serve as a guide to, for example, "curriculum development"*1 directed towards specific themes and target groups in environmental education.
The foregoing means that persons - and by this we also mean groups of persons - must not be characterised on the basis of, for example, their level of development, degree of interest and other specific individual criteria alone but also on the basis of their place in society.
The following division (other divisions are also possible) can thus be made:

- persons as members of social groupings (public-oriented),
- persons with an educational task (teaching- and counselling-oriented),
- persons involved in decision-making (policy-oriented).

It is also possible to specify the conservation/environmental movement as a whole as a target group of environmental education. In the final analysis that movement, too, is in need of development and support. Because in this case it is a furthering of expertise that is required, we have given a short description under section 4.4, where this group is dealt with.
It cannot be said in general that one target group is more important than another. It is important, however, that the educator should make a clear choice by himself or should have an integrated approach to target groups. That has consequences for the matching of the education which he has to offer with the characteristics and possibilities of the various groups. This applies in particular to the way in which the part-strategies mentioned in section 3.3 are handled. This does not prejudice the need to make a connection with people's learning requirements and their "starting situation"*. The target-group-oriented curriculum development in environmental education mentioned above, to the extent that it has got under way at all, has not yet been the subject of sufficiently systematic description in the literature or elsewhere.

The next section will describe the overall state of affairs in present-day educational practice with reference to these target groups. After that there follows a short discussion of the support available for this educational practice.

4.3. Educational practice

Persons as members of social groupings

Right from the beginning there has been intensive concentration on the "general public". There is a constant stream of educational activities directed towards this "general public". Usually this heterogeneity is accepted ("Everyone is welcome"). A distinction is increasingly being drawn, however, according to social background, age or individual activity: e.g. schoolchildren, consumers, farmers, people engaged in various recreations, etc. These people are part of various social groupings, through which a rather more specific approach is possible with a greater chance of success. Nature conservation education and the environmental education which is developing out of it have now been in existence for about 25 years and - in all the diversity which characterises these disciplines - have achieved undeniably important results: a widespread - if rather vague - awareness that man's dominant place in nature has caused a multiplicity of environmental problems.
The contribution made by nature conservation education to deepening the insight into the structural, societal character of environmental problems is by definition modest. That applies not only to the general public or persons in specific social groupings but also to people who by their specific knowledge and public work are precisely in a position to effect the development of that insight and its translation into societal terms. For those reasons the following two target groups merit particular attention.

Persons with an educational task

This description includes, for example, teachers in primary and secondary education, youth leaders, counsellors at counselling

institutes, social and other academies, teacher training colleges and agricultural and horticultural colleges. In their work these people can introduce aspects of environmental problems. The voluntary and professional environmental education sector has so far been unable to offer these groups any great structural assistance. Admittedly, in the course of the years various national and regional educational projects have been set up, teaching materials have been produced, experiments have been carried out or are still being developed, but there is in general no firm place for environmental education in the education, training and general care structure of or for these target groups and their institutions at the present time.

Persons involved in decision-making

In all kinds of areas the decision-makers make decisions which can have repercussions on the quality of the natural environment. They do so on the basis of their responsibility within the field in question. Decision-makers and those who prepare their policies are usually confronted by pressure groups: "You've got to put pressure on politicians". There is a grain of truth in this attitude but politicians, civil servants, bank managers, industrialists, church leaders, chairmen of farmers' organisations and so on also undergo education and training. Certainly, vested interests, financial/economic considerations, dependence on existing structures and political agreements mean that it is not easy to see what role environmental education can play for such groups. With a few exceptions there is virtually no systematic knowledge about this and even less about the most effective way of approaching such groups.

4.4. Support

In the previous section the term "support", which has become popular in the relevant professional circles in the past few years, was used. A supporting function in this sense of the

word is exercised by institutions which help other institutions, groups or individuals to carry out their educational tasks in the best possible way. In this section we use the term to denote support given to those working within the field of environmental education either as professional teachers or as volunteers. Although an exhaustive description will not be given here, something can be said briefly about the meaning of the term "support". Several different meanings can be assigned to it. On the one hand it can refer to the facilities provided by, for example, national or provincial organisations and officials (e.g. materials, courses, audio-visual aids). On the other hand it can also cover the "theoretical" development of the discipline in its entirety. The support made available at national level, which must be complementary to that supplied at provincial level, consists in the Netherlands of a developing network of private organisations.

Since the delimitation of tasks as between the national and provincial levels has not been fully completed, no distinction has been made between possible differences in terminology. It is possible that the term "development"[2] will be chosen to denote supportive activities of national organisations or persons working at national level and the term "assistance" to denote those of provincial (or regional) organisations. The fact that it is not only a question of different terms but also of a different interpretation of the work has already been suggested at the beginning of this section, by - among other things - the use of the word "complementary".

Thus it can be imagined that the provision of study material for a particular educational activity will have a different effect from the publication of research by an institute with the aim of developing methods for use in environmental education as a whole.

Nor is it excluded that the increasing differentiation in organisation - in a horizontal as well as in a vertical direction - has the effect that assistance activities operate primarily at local level and development activities (in

the sense used above) operate primarily at provincial/ regional and also national level. The term "support" can be used as an umbrella designation.
The CEE considers further operationalisation of these terms in connection with each other to be one of its future tasks, to the extent that other bodies have not already done so.

Below we examine briefly the various components of support which are being developed at the present time at both levels. There is a certain amount of overlapping between the various components.

Development of content

As was stated in earlier chapters, the emphasis in environmental education used to be on the beauty of the natural world and on interesting facts about that world. It is now being developed into a system of society-oriented educational activities, with the existence of environmental problems as its common denominator. It is not oriented towards stating how those problems must be solved by technical means (short term). What it is oriented to is explaining the Western world-view as manifested through our style of production and consumption. It is also concerned with proposing alternatives and possible resultant future action (long term). Important subjects which could illustrate this educational view are, for example: agriculture and environment; energy utilisation; consumption, production and the environment; the origin of the Dutch landscape; open-air recreation and nature conservation; connections with environmental problems in the Third World. Another aspect connected with the subject matter is the increasing intermeshing of the discipline with adjacent subject areas, especially economics and technology. This provides another source for the development of various topics, such as acid rain, manure surpluses, the shifting of polluting industry to developing countries and even problems such as unemployment and economic crises.

Development of methods

The development of methods is connected with the development of the subject matter. It can be characterised as an attempt to make educational processes more systematic.
The criteria for education mentioned in Chapter 3 must be further elaborated, with the help of scientific knowledge, to form a system of methodical procedures for environmental education.
Examples of relevant topics here are: the role of universities in the development of environmental education, environmental education in museums and visitors' centres; the methodical approach to very threatening but abstract problems; development of group-oriented educational processes alongside approaches through the mass media and individual approaches; differences in approach for different target groups.

Formulation of theories

Although there is communication about various subsidiary aspects within the field of environmental education, it is mostly at the level of an exchange of experience. There is too little in-depth examination of the subject matter, in the form of the formulation of theories, and government gives few incentives to encourage such work. An upgrading of the value attached to the formulation of theories, in combination with research, planning and the promotion of expertise, could result in theory (universities and colleges) and practice (practical teaching) in the field of environmental education becoming more closely associated with each other.

Promotion of expertise

In view of the developments taking place in environmental education and the changing demands placed on education workers in this field, a continuous stream of activities which promote expertise (post-qualification or refresher training) is required. This applies to both professional and voluntary staff, and due weight must be given to the specific needs of each group. In many places in the Netherlands activities of this kind are being carried on,

but insufficiently systematically. More clarity is usually needed about the nature, the interdisciplinary connection and the results of such programmes.
It may be noted in this connection that research into training for workers in environmental education is still virtually untrodden ground.

Research planning

An increasing number of institutions both inside and outside the universities are gradually beginning to take an interest in research into aspects of environmental education. But here too there is no harmonisation, while subjects for research in this field still have to be worked out.

Lastly, not enough is known about how existing sociological research can be made applicable to environmental education.

Documentation/information

A certain amount of systemisation appears to have taken place in this field. Documentation about education and information as branches of science, despite the fact that the requirements are already known from adjacent disciplines, is still very much underdeveloped. In the field of data processing an attempt is being made to introduce a certain degree of automation, so that data can be retrieved and made available more easily and more understandably. An investigation into the possibilities of links with similar data files in England and Scotland would be worthwhile and the ERIC system operated by Ohio State University (United States) merits study.

International policy

Since the causes and effects of environmental problems in different countries are usually connected in the same way and know no national boundaries, it is understandable that the international aspects of those problems should be receiving increasing emphasis in environmental education. Moreover, the industrialised world, being a joint source of environmental

problems in the Third World, bears a special responsibility for the solution of those problems. That means, inter alia, that national environmental education policy must be seen in conjunction with the policies of other countries and international organisations. During international meetings new insights can be exchanged and common strategies and policies can be developed. The formulation of a policy connnected with the educational aspects of the World Conservation Strategy and in extension of the latter a so-called National Conservation Strategy is an example of an activity inspired by international IUCN conferences (see International Union for Conservation of Nature and Natural Resources, 1985).

Footnotes

1. The term "curriculum development", which is in current use in education, has been used deliberately here, to indicate the necessity for a methodical systemisation of the discipline. It is equally necessary for this systemisation to be developed in out-of-school learning situations.

2. This term is intended to mean the (theoretical) development of the discipline in its entirety rather than the renewal of the educational work of individuals (which is also necessary).

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EXPLANATION OF TERMS USED

Starting situation	The level of knowledge, awareness and skills possessed by a student at the commencement of a learning situation.
Education	Deliberate organisation of learning situations.
Educator	Person assisting with educational activities.
Landscape	A complex of relationship patterns, together forming a recognisable part of the world's land surface, which has been made and is maintained by the interactions of animate and inanimate nature, including man.
Teaching goal	Concrete educational goal which describes the perceptible behaviour of the students in verbs of action or in behavioural terms.
Curriculum development	A body of activities including working as deliberately as possible towards the formulation of planning decisions in teaching, training and schooling (=education) which are such that their implementation can be regarded as fruitful and feasible.
Nature	Everything which orders and maintains itself, whether or not in connnection with human activities, but not in accordance with human objectives. N.B. The term covers both the biotic and the abiotic elements and their interaction.

Nature education	Deliberate organisation of learning situations designed to communicate knowledge and to instil a feeling for nature.
Nature conservation education	Deliberate organisation of learning situations geared to questions of nature conservation.
Environmental education	Deliberate organisation of learning situations geared to environmental problems.